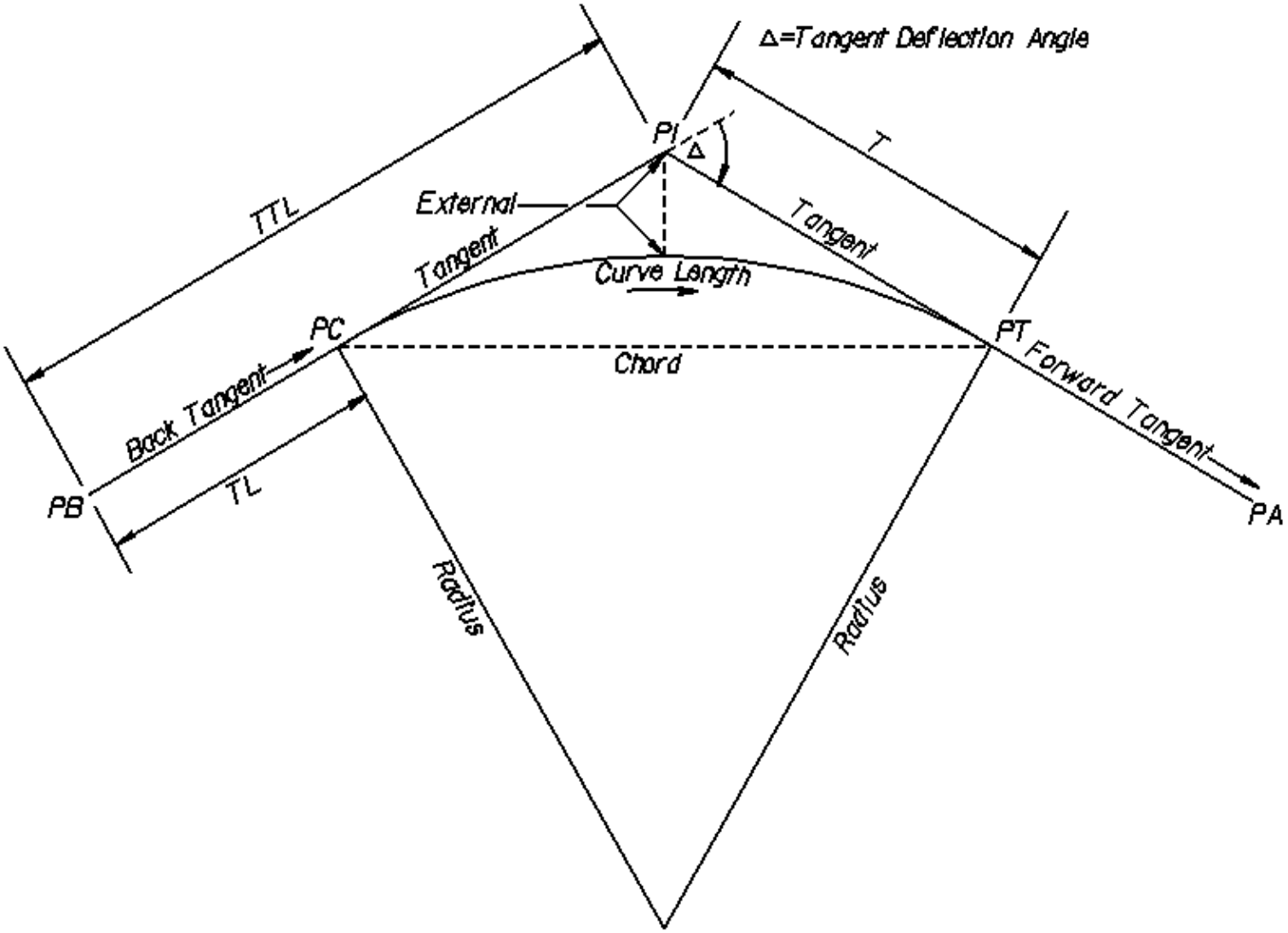
CURVE COMMANDS



COMMAND LINE SYNTAX

[1] STOre CURve name [2] Back Tangent Reference [3] Element
[4A or 4B] Ahead Tangent Reference [5] (STAtion Station Label station)

[1] The " name" is a one to nine character alphanumeric identification of the curve to be stored. Such as: C1, C2, C222, ABC123, etc.
[2] Back Tangent Reference defines the direction and length of the tangent starting the curve.
[3] Element defines the actual curve itself.
[4] Ahead Tangent Reference defines the direction and length of the tangent ending the curve.
[5] Station Label attaches a station to the curve if needed.

[1] STOre CURve name

STO CUR C222

[2] Back Tangent Reference

Use ONE of the options to define the Back Tangent .
Remember: *px, pb, pa,* etc. are previously stored points.

OPTION 1:

The point of curvature (PC) and direction back (DB) defines tangent.

PC *px* DB direction

PC 22 DB N 11 02 28.01 E

OPTION 2:

The point of intersection (PI) and direction back (DB) defines tangent.

PI *pd* DB direction

PI 30 DB N 11 02 28.01 E

OPTION 3:

The beginning point for the back tangent (PB), direction back (DB) and the back tangent length (TL) defines tangent.

PB *pa* DB direction TL distance

PB 10 DB N 11 02 28.01 E TL 648.1345

OPTION 4:

The beginning point for the back tangent (PB), direction back (DB) and the length from (PB) to (PI) , also known as the Total Tangent Length (TTL), defines tangent.

PB *pa* DB direction TTL distance

PB 20 DB N 11 02 28.01 E TTL 1964.4258

OPTION 5:

The beginning point for the back tangent (PB) and the point of intersection (PI) defines tangent.

PB *pa* PI *pb*

PB 20 PI 30

[3] Element

Use ONE of the options to define the element.

OPTION 1:

Use the radius to define the element.

RADius radius

RAD 11459.1559

OPTION 2:

The degree of curve defines the element.

DEGree angle (arc deflection)

DEG 0 00 00

OPTION 3:

The length of the tangent from (PC) to (PI) if the radius or degree is not known.

Tangent distance

T 187.236

OPTION 4:

The arc length of the curve from (PC) to (PT) if the radius or degree is not known.

Length distance

L 1294.8893

OPTION 5:

Point on curve.

POC ***px***

POC 74

[4B] Ahead Tangent Reference

Use ONE of the options to define the ahead tangent reference.

OPTION 1:

The ahead tangent is defined by (DA) direction from (PI) to (PT)

DA direction

DA N 04 34 00.00 W

OPTION 2:

A point on the forward tangent (PA) defines the tangent ahead.

This OPTION can be used ONLY with OPTIONS 2, 4, and 5 of the Back Tangent Reference.

PA ***pe***

PA 40

OPTION 3:

The tangent ahead can be defined by the Deflection angle (DEF) and the tangent's direction using either (P) clockwise or (M) counterclockwise. Note that the direction is needed before the angle. If a direction is not given (P) will be assumed.

(P / M) DEFlection angle

P DEF 06 28 28.01

OPTION 4:

The tangent ahead can be defined by using the direction of the Deflection angle (P/M) and the length of the tangent (T) between the (PI) and the (PC). This OPTION can only be used when the radius or degree is used as the Element. If a direction is not given (P) will be assumed.

(P / M) Tangent distance

P T 648.1345

OPTION 5:

The tangent ahead can be defined by using the direction of the Deflection angle (P/M) and the arc length of the curve (L) between the (PC) and the (PT). This OPTION can only be used when the radius or degree is used as the Element. If a direction is not given (P) will be assumed

(P / M) Length distance

P L 1294.8893

OPTION 6:

The tangent ahead can be defined by using the direction of the Deflection angle (P/M) and the chord length of the curve (LC) between the (PC) and the (PT). This OPTION can only be used when the radius or degree is used as the Element. If a direction is not given (P) will be assumed

(P / M) LC distance
P LC 1294.2005

OPTION 7:

The tangent ahead can be defined by using the direction of the Deflection angle (P/M) and the external distance (EX). This OPTION can only be used when the radius or degree is used as the Element. If a direction is not given (P) will be assumed. See curve diagram for help.

(P / M) EXTernal distance

P EXT 18.2855

EXERCISE: write out the input files to store the curves, this includes commands for storing points

1. Store Curve C2 - try the various combinations of command line syntax OPTIONS to store this curve (there are more than six combinations that will work)

Curve C2			
P. I. Station =	**6+48.13**	**N 484373.7238**	**E 687891.9708**
Delta =	**6^28'28.01" RT**		
Tangent =	**648.1345**		
Length =	**1294.8893**		
Radius =	**11459.1559**		
External =	**18.3147**		
Long Chord =	**1294.2005**		
Mid. Ord. =	**18.2855**		
PC Station =	**00+00.00**	**N 483737.5863**	**E 688016.0972**
Back =	**N 11^02'28.01" W**		
Ahead =	**N 04^34'00.00" W**		

2. Store Curve C4 Use six combinations of appropriate OPTIONS. You are very restricted by the information given.
Curve C4
Point 40 is the beginning of the back tangent.
Point 50 is the point of intersection
5^00'00" is the degree of curve
The radius of the curve is 1145.9156'
69^39'39.99" to the right is the deflection angle
The tangent length is 795.0733'
Point 60 is a point on the tangent ahead

3. Store these curves. (there are at least 4 ways to store curve L1)
Curve L1
P. I. = N 966039.7097 E 1265551.3080
Delta = 13^ 25' 25.70" LT
External = 4.9424
Radius = 716.1970
Degree = 8^ 00' 00.00"
Length = 167.7975
Back = N 3^ 16' 08.51" W

4. This should be fun
Curve LREV6
P. I . Station = 44+16.06 N 968893.4473 E 1264343.4736 point 102
C. C. * = N 969207.5446 E 1264922.8936 pt 104
P. C. Station = 42+45.47 N 968769.6305 E 1264460.8154 pt 101
P. T. Station = 45+78.81 N 969059.3472 E 1264303.7631 pt 103
P.O.C. = N 968889.6001 E 1264371.3537 pt 105

5. Store this curve using Options 4,5, & 6 of the Ahead Tangent Reference
Curve DW1
Tangent = 23.4623
Radius = 150.00
Degree = 38^ 11' 49.87"
Delta = 17^ 46' 47.42" RT
P.I. = N 966903.3282 E 1265227.77098
Length = 46.5475
P.T. = N 966924.9149 E 1265236.9630
Long Chord = 46.3610
Ahead = N 23^ 03' 54.75" E

*** center of curve**

PRINTING DATA FROM STORED CURVES

FORMAT A

PRInt CURve name

PRI CUR 20	**data for curve 20**

FORMAT B

PRInt ALL CURves

PRI ALL CUR	**data for all curves in Gpk file**

FORMAT C

PRInt CURve *

PRI CUR *	**data for all curves in Gpk file**

DELETING STORED CURVES

FORMAT A

DELete CURve list

DEL CUR 35	**deletes curve 35**

FORMAT B

DELete CURve *

DEL CUR *	**command* not supported by GEOPAK must delete by name**

LIST STORED CURVES

FORMAT A

LISt CURve

LIS CUR	**lists all curves in the Gpk file**

WRITE THE COMMANDS TO:

List all stored curves.

Print all curves in the Gpk file.

Print curve DW1.

Print all curves in the Gpk file with Lrev prefix.

Print all curves in the Gpk file with a 1 suffix.

Delete all curves in the Gpk file.